



Material Safety Data Sheet


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Section 1 - Product and Company Identification

Product name : RGB Regeneration Medicine	
Other names : --	
Product use : Removing color on the color filter (Semiconductor 、 TFT-LCD Photolithography process)	
Supplier's name : San Fu Chemical Co., Ltd., Shan Hua Plant	
Supplier's address : 340 Hsiao Hsin Li, Shan Hua Town, Tainan Hsien, Taiwan, R.O.C.	
Supplier's phone : 06-5837608	Emergency phone : 06-5837608
FAX. : 06-5839498	

Section 2 - Hazards Identification

Classification :	
1. Flammable Liquids	Category 4
2. Acute Toxicity	Category 4 (Ingestion)
3. Acute Toxicity	Category 4 (Skin)
4. Skin Corrosion/ irritation	Category 1
5. Serious eye damage/ irritation	Category 1
6. Skin Sensitization	Category 1
The Most Important Hazards and effect	
Label element :	
■ Hazard symbol : Flame, Skull and Crossbones, Corrosive, Healthy Hazards	
	
■ Signal word : Danger	
Hazard statement :	
1. May cause fire while heating	
2. May burn by self inducting heat	
3. Swallow is harmful	
4. Harmful in contact with skin	
5. Inhale is harmful	
6. Cause serious skin burn and eye damage	
7. Cause serious eye damage	
8. May cause skin sensitization	
9. May cause respiratory tract irritation or drowsiness or dizziness	
10. Long term or repeated exposure may cause organ injury	
11. May be harmful to the respiratory tract if swallow	
Precautionary statement :	
1. Away from high temperature.	
2. Avoid eating and drinking while operating.	
3. Wear proper protective clothing, gloves, goggles/ face shield.	
4. Take off the contaminated clothes immediately.	
5. If contact with eyes, flush with large amount of water immediately and seek medical attention.	



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- 6. Do not inhale the gas/smoke/vapor/fog
- 7. Do not induce vomiting.
- 8. Avoid contact with skin and eyes.

Others Hazard : --

Section 3 - Composition/Information On Ingredients

Mixture :

Component or impurities contributing to the hazard	CAS No.	Concentration or concentration range (%)
Potassium hydroxide	1310-58-3	1~40 %
Alkanolamine	--	1~40 %
Surfactant	9003-11-6	< 50 %

Section 4 - First Aid Measures

The First-aid Information :

- Inhalation : Provide the fresh air and seek medical attention immediately.
- Skin Contact : Wash the contaminated skin with large amount of water and take off the contaminated cloth. Seek the medical attention immediately.
- Eye Contact : Flush the contaminated eyes with large amount of water for at least several minutes and seek the medical attention immediately.
- Ingestion :
 1. Give large amount of water to the patient.
 2. Avoid induce vomiting. (danger of perforation)
 3. Seek the medical attention immediately.
 4. Do not try to neutralize.

The Most Important Symptoms and Hazardous Effects : Respiratory tract irritation, skin irritation, eye irritation.

Protection of First-aiders : Wear protective goggles, anti-corrosive gloves, protective cloth, avoid inhale vapor.

Notes to a Physician : Strong bases, burn, pain

Section 5 - Fire Fighting Measures

Extinguishing Media :

1. Chemical powder, foam, water spray
2. Big fire, suggest using foam or water spray to put out a fire.

Specific Hazards when Fire-fight :

1. If fire accident happens, it is ranked to the Medium fire hazard.
2. Vapor is heavier than air may spread far. Once the substance meet the source of fire, may cause tempering.
3. Vapor / air mixture.
4. Material temperature is higher than flash point, may be explosive.

Specific Fire-fighting Procedure :

1. If safe to do so, move the containers away from the scene of fire.
2. Cool tanks or containers with water spray till the fire is extinguished.



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3. Away from the tank ends.
4. Fire in storage area or cargo, use unmanned operating spray controller or automatic swinging nozzle to cool down the fire until the fire is extinguished. If not working, follow the measures: Isolate the dangerous area and no entry for non-related personnel, and let the fire burn out.
5. Evacuate immediately if the alarm of the Safety valve starts or changes colors due to fire.
6. Storage tank, delivery track or slot car, evacuate to 800m radius far.
7. Unless the chemical leakage could be eliminated immediately, do not try to extinguish the fire.
8. Water spraying with large amount of water.
9. Avoid using the high pressure vapor to disperse the leakage.
10. Water spraying from the protective area or safety distance. Cool tanks or containers with water spray till the fire is extinguished.
11. Avoid inhale chemical substance or by-products from firing.
12. Stay in the upwind area and away from the low-lying.

Specific Protection of Firefighters : Fireman must wear respirator, fire cloth and protective gloves.

Section 6 - Accidental Release Measures

Personal Precautions :

1. Restrict access the area until completion of clean up.
2. Ensure clean up is conducted by trained personnel only.
3. Wear proper personal protective equipments.

Environmental Precautions : Process aeration in the area.

Methods for Cleaning up :

1. Do not touch spilled material.
2. Avoid spilled drain into the sewer or airtight room.
3. If safe to do so, try to prevent or reduce leakage.
4. Use the soil, dry sand or other non-combustible material to absorb the leakage.
5. Small spill: Absorb with non-combustible material. The contaminated absorber is as dangerous as the leakage. Collect the contaminated absorber and leakage into the proper covered container with labels. Wash the spilled area with water. Small leakage could be diluted with large amount of water.
6. Large Spill: Contact the fire fighting unit, emergency control unit and supplier for help.

Section 7 - Handling and Storage

Handling :

1. Staffs should under the training in hazardous info and safety use of the related substance.
2. Empty tank, container, tube may have danger residue. Must not do the welding, cutting, drilling or other heat producing work without cleaning.
3. Storage tank or container could fill up with inertia gases to decrease the danger of fire and explosion.
4. Keep the pathway and exit clean without obstruction.
5. Avoid producing drops or vapor. Working in the specific well ventilated area and use the minimum amount. Operating area should be separated from storage area.



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6. If necessary, wear proper personal protective equipments to avoid contact with the chemicals or contaminated equipments.
7. Don't pour the contaminated liquid to the original storage tank.
8. The container should be labeled. Keep tight without using and avoid damage.

Storage :

1. Store in a cool, dry, well ventilated and indirect to sunlight location. Away from heat, ignition and incompatibles.
2. Consider install equipment to prevent spilling.
3. Store in a cool fireproof location.
4. Install Well-ventilated system. Keep away from sources of spark, open flame, oxidizing agents. Use explosion-proof equipment and certified safety electric equipments. Use proof electrical equipment (ventilating, lighting and handling).
5. The flooring where the product is stored should be impermeable to the product.
6. Make a threshold at the door and build a slope or a groove in front of the door to enable the fluid leakage to be emitted to a safe place.
7. Clearly labeled in the entrance of the storage place, no obstacle. Only allowed trained personnel to access.
8. Separate the working area and storage place. Away from the elevator and main entrance of the building/room.
9. Keep a fire extinguisher and cleaning equipment nearby.
10. All equipments should be regularly checked and maintained.
11. All containers should be regularly checked and maintained for the label and damage.
12. Control the storage in a limited amount.
13. Store in the suggested temperature from the manufacturer or supplier (Room temperature must lower than 50°C). If necessary, install the temperature alarm.
14. Avoid the indoor storage in large amount. Ensure the storage in an isolated fireproof building.
15. The storing basin shall be based on the ground with its base completely sealed from leakage, and shall be surrounded by a fluid-protective dike capable of carrying the entire volume of storage.

Section 8 - Exposure Controls & Personal Protection

Engineering measures :

1. Well ventilated area if the must while operating and should cooperate with the air condition.
2. In order to control the air pollution in the low exposure limit, such as bad ventilated space from vapor, fog and heating influence need to increase the venting, airborne particulate, closed system, respiratory protection equipments.

Control parameters

TWA	STEL	Ceiling	Biological standards
--	--	3 ppm	--

Personal protective equipment :

- Respiratory Protection : While high concentration vapor generated should use proper N10SH – Approved respirator.
- Hand Protection : Impervious gloves
- Eye Protection : Wear chemical splash goggles and face shield (Minimum with 8 inches).
- Skin and Body Protection : Wear protective clothing, Overalls, working boots made by rubber materials mention above.

Hygiene measures :



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1. Immediately take out of contaminated cloth after work. Either disposes these clothes or clean it before wears them again. It is a must to let the laundry know the dangerous of these contaminated clothes.
2. Strictly no drinking and eating in the working area.
3. Must wash thoroughly after processing this material.
4. Keep hygiene in the working area.

Section 9 - Physical & Chemical Properties

Appearance : light yellowish liquid	Odor : Ammonia odor
Color : Transparent	Melting Point: > 0°C (liquid form in the room temperature and atmosphere)
pH value : > 13.0	Boiling point/boiling range : > 100°C
Flammability: --	Flash point : > 65°C
Decomposition temp : --	Test method : Closed cup NIEA R210.21C
Auto ignition temp : > 131°C	Explosion properties :
Vapor pressure(21.1°C) : < 100 mmHg	Vapor density : < 1.0
Density : 1.1 ± 0.1	Solubility : dissolve in water
log Kow : -1.31	Evaporation Rate : < 1

Section 10 - Stability & Reactivity Data

Stability : It's stable within the normal condition
Possible hazardous reactions under specific conditions : Irritated odor in high temperature, cause burn with serious condition. Avoid contact with acidic.
Conditions to avoid : --
Materials to avoid : Strong oxidizer, acid, peroxide, alkali metals, alkaline earth metals, halogens
Hazardous decomposition products : Generate CO and CO ₂ during burning. Avoid inhaling the highly poisonous CO.

Section 11 - Toxicological Information

Route of exposure : Skin, inhalation, ingestion, eyes
Symptoms : Corrosive with eye contact, corrosive with skin contact, burn the Esophagus, stomach with ingestion and endanger the perforation of the esophagus and stomach.
Immediate Toxicity : <ol style="list-style-type: none">1. Skin : Mild toxicity, but long term and repeated contact will cause dermatitis.2. Inhalation : Vapor may cause the irritation of the respiratory system and chest pain, coughing, nausea, vomit, dizziness.3. Eye : Mild irritation, cause eye lid inflammation and eye inflammation.4. Ingestion : Mild toxicity, systemic injury.<ul style="list-style-type: none">● LD₅₀: (oral 、rat) :1720● LD₅₀: (Skin 、rat) :1000



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- LC₅₀: (inhalation, rat) :4350

Specific effects : Inhale of vapor cause skin corrosion and burn easily.

Section 12 - Ecological Information

Ecotoxicology :

- LC₅₀(fish) : 40 mg / I / 96 H
- EC₅₀(Aquatic Invertebrates) : --
- Bioconcentration factor (BCF) : --

Persistence and degradability :

1. BOD is 48% (5 days)
 2. If release into water will process organic decomposition.
- Half-Life (Air) : --
 - Half-Life (Water surface) : --
 - Half-Life (Groundwater) : --
 - Half-Life (Soil) : --

Bioaccumulative potential : Drug in the body will be decomposed into different compounds. Part will be discharged from breathing; part will be out from urine. But some of the drugs may be existed in the liver and kidney.

Mobility in soil : If release in the soil, will be decomposed expectedly by organism.

Other adverse effects : Poisonous to the aquatic livings.

Section 13 - Disposal Considerations

Methods of disposal :

1. Disposal management should follow the environmental regulation.
2. Disposal management from this products and emission standard should follow the environmental laws and regulations.

Section 14 - MSDS Transport Information

UN classification number : UN 1015

Proper D.O.T Shipping Name : Photo-resist Remover

Hazard Class : Corrosion Category 8

Packing Group : Lorry Delivery

Marine pollution : none

Specific precautionary transport measures and conditions : According to the local environmental protection regulation, should examine the standard transferring equipment and certification.

Section 15 - Regulatory Information

Regulations :

1. Regulations for Labor Safety and Health Installations
2. Regulations for Chemical Hazard Communication
3. Permissible Exposure Limits of Hazardous Substances in the Work Environment
4. Road Traffic Safety Regulations



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5. Industrial Waste Storage and Disposal Regulations and Facility Standards

Section 16 - Other Information

Literature references	1. RTECS Database , TOMES PLUS Disc , Vol.68 , 2006 2. ChemWatch Database , 2006-1 3. OHS MSDS Database , 2006 4. HSDB Database , TOMES PLUS Disc , Vol.68 , 2006		
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